United States Patent [19]

Aust

[11] **4,126,222**

[45] **Nov. 21, 1978**

[54] **REINFORCED FORM-FITTING SHIPPING CONTAINER**

[75] Inventor: **John J. Aust,** Toledo, Ohio

[73] Assignee: **Owens-Illinois, Inc.,** Toledo, Ohio

[21] Appl. No.: **867,401**

[22] Filed: **Jan. 6, 1978**

[51] **Int. Cl.**[2] **B65D 85/54**

[52] **U.S. Cl.** ..... **206/326;** 229/23 R; 206/314

[58] **Field of Search** ..... 229/23 R, 16 R, 8; 206/314, 326

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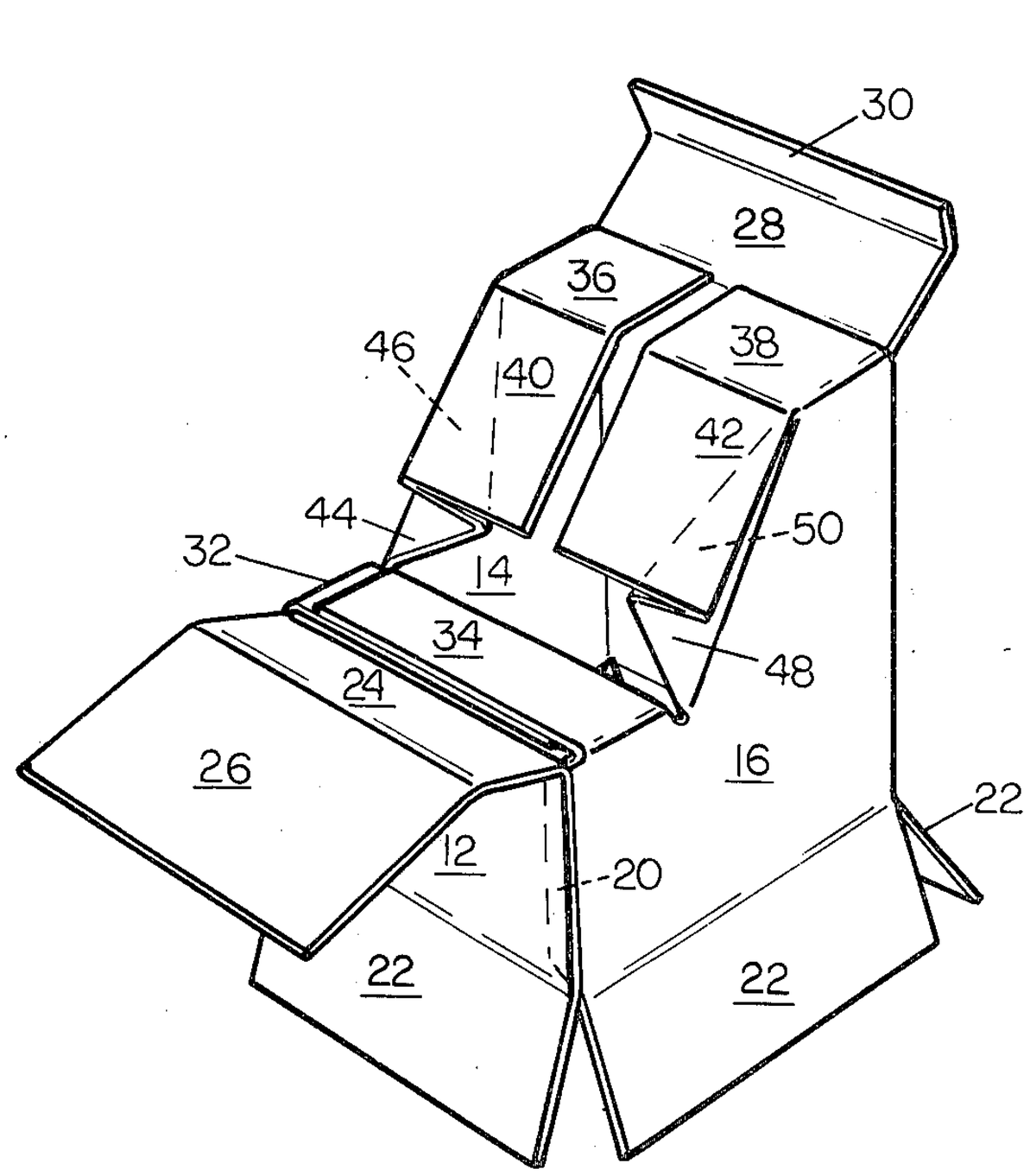
Primary Examiner—Davis T. Moorhead
Attorney, Agent, or Firm—John R. Nelson; Myron E. Click; David H. Wilson

[57] **ABSTRACT**

A reinforced form-fitting shipping container from a single blank of generally rectangular outline and particularly suited for the shipping and storing of upholstered furniture. As used for upholstered chairs of the type having a relatively low seat and a backrest, the container comprises an intermediate horizontal wall overlying a front portion of the chair, a horizontal top wall extending over the top of the backrest, and an inclined upper front wall extending between the intermediate horizontal wall and top wall. The container is reinforced at areas of increased stress by integral reinforcing elements providing a multi-ply construction of the inclined upper front wall and preferably also of the intermediate horizontal wall and top wall. In the preferred embodiments, the inclined upper front wall is reinforced and stabilized by overlapping scored and folded portions formed thereunder and extending from a pair of sidewalls.

5 Claims, 5 Drawing Figures



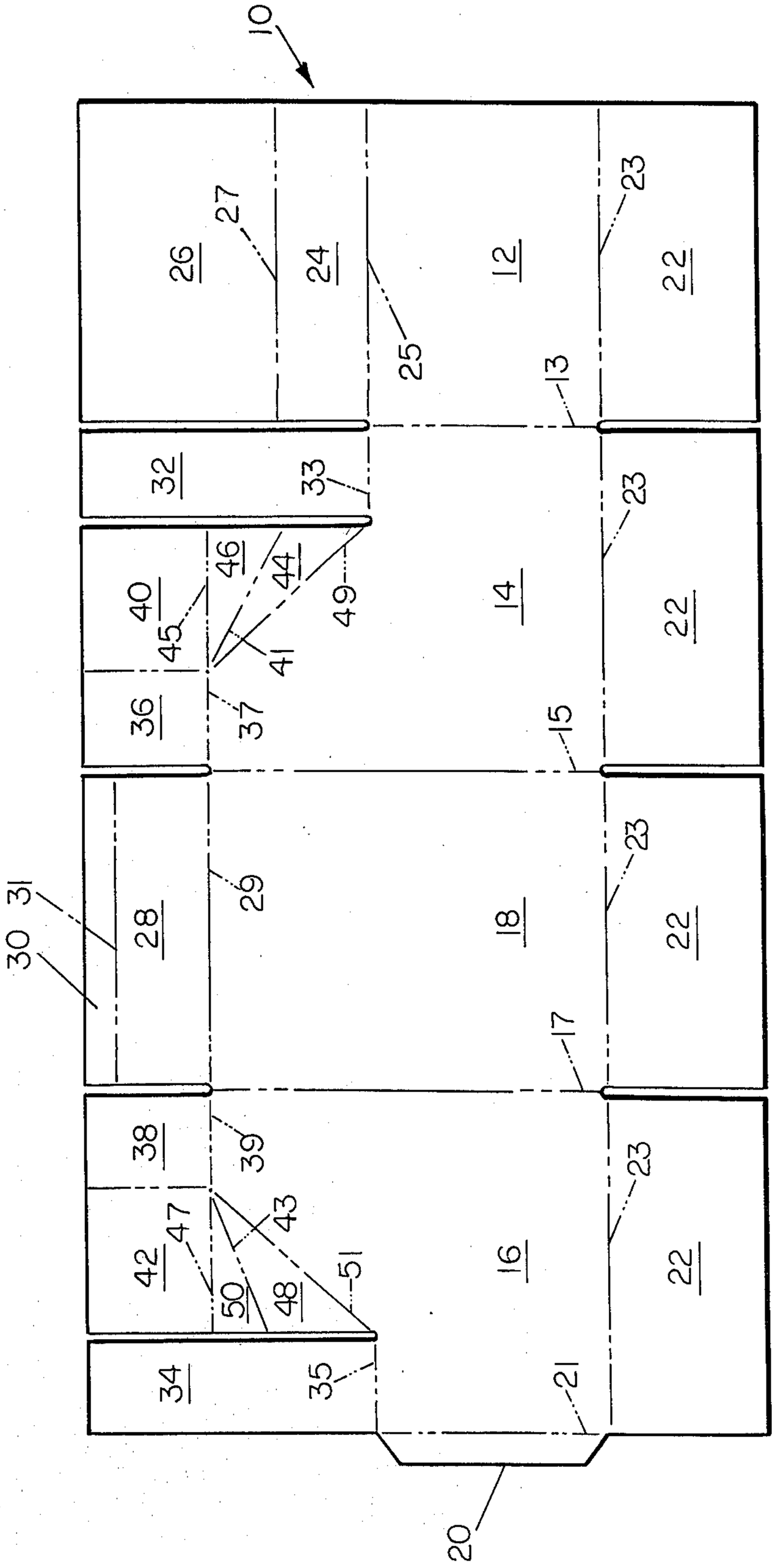

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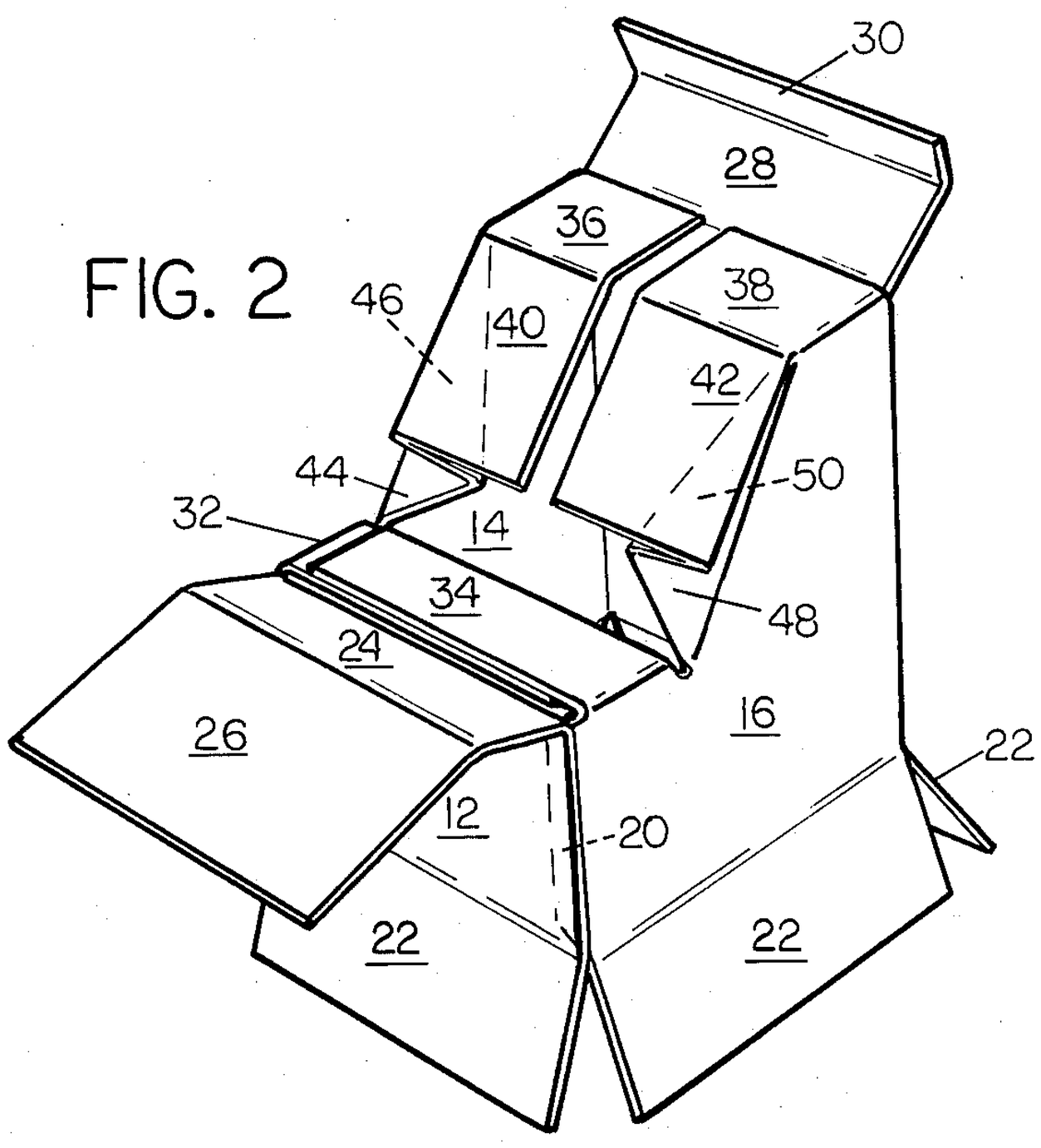
FIG. 1

FIG. 2



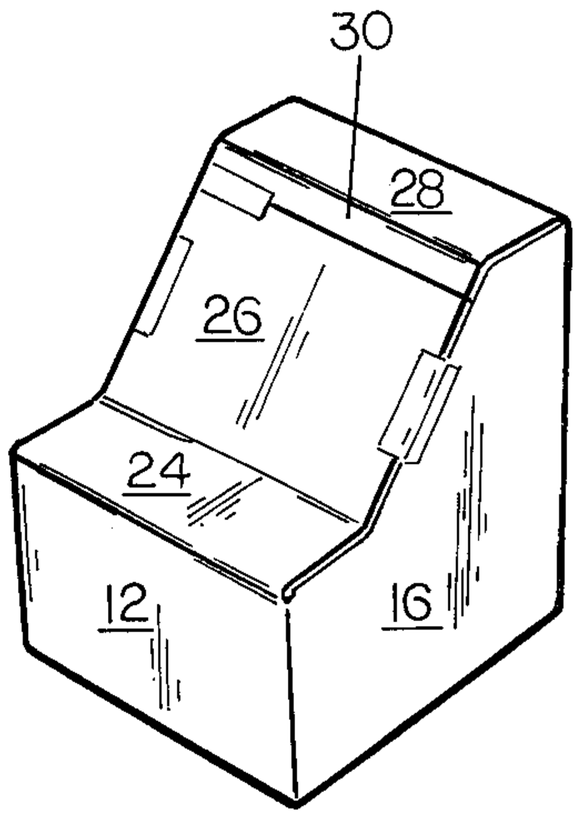
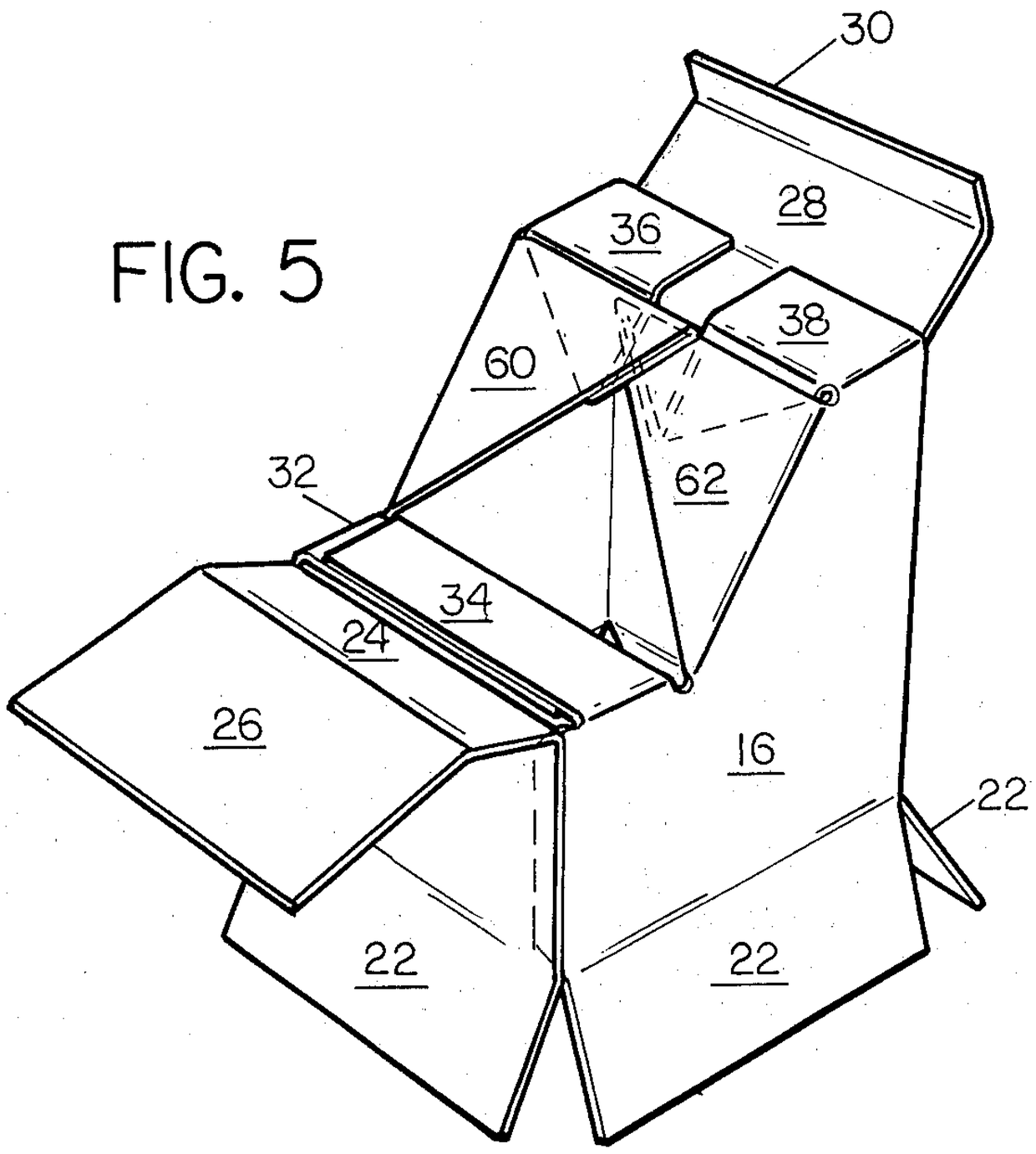


FIG. 3

FIG. 5



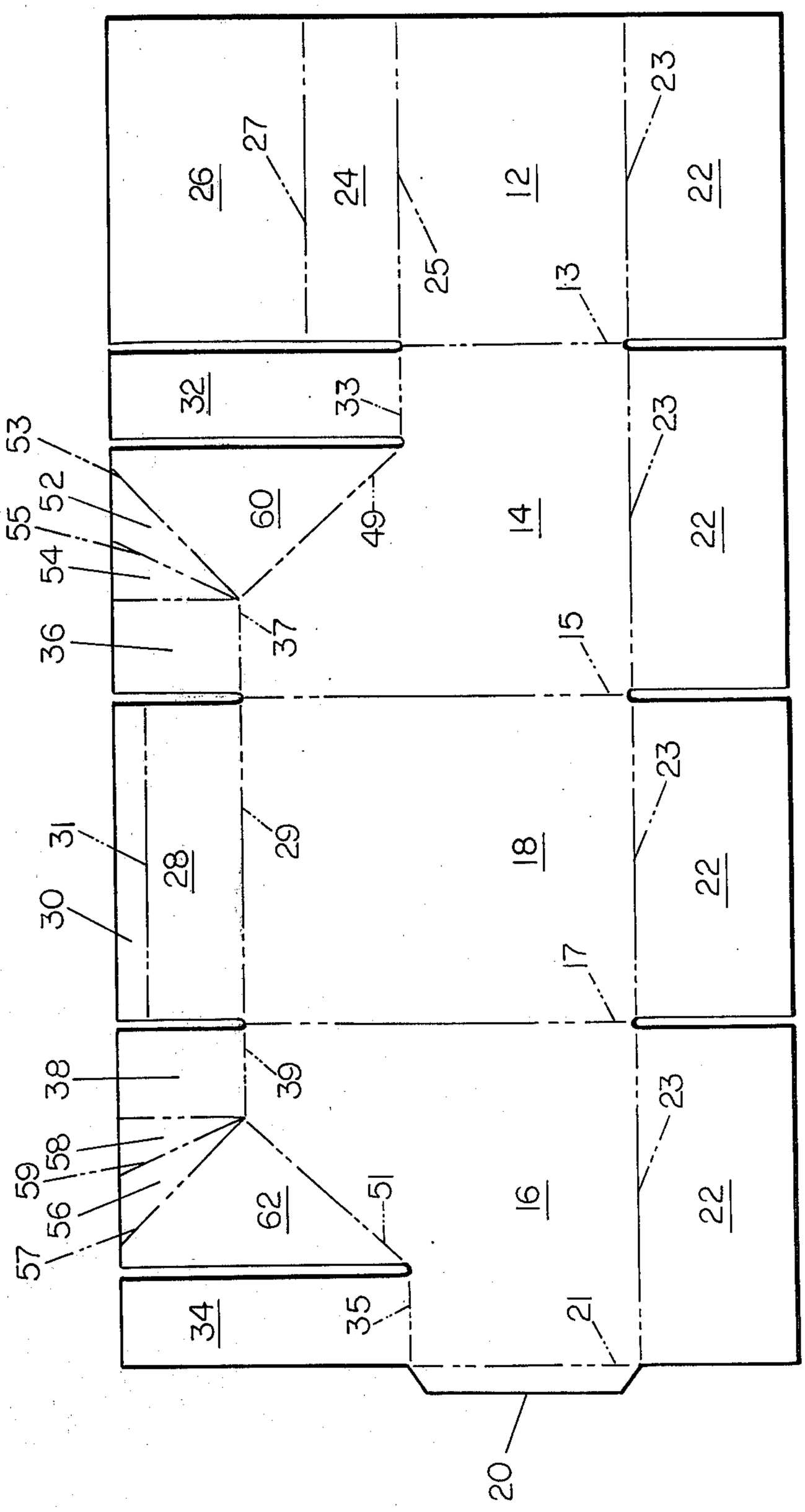

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FIG. 4

REINFORCED FORM-FITTING SHIPPING CONTAINER

BACKGROUND OF THE INVENTION

This invention relates to shipping containers formed from a blank of paperboard, preferably corrugated paperboard, and more specifically, to form-fitting containers used for shipping and storing upholstered furniture such as upholstered chairs.

A variety of shipping containers for furniture, including upholstered furniture such as chairs, is shown in the prior art. Typical examples are found in the U.S. Pat. Nos. to Nickerson 1,686,834, Rous 2,313,362, Bishop 2,346,003, Gibbons 2,675,955, and Cavin 2,832,525. While of the form-fitting type, the arrangements shown therein have serious disadvantages insofar as they are constructed from two or more separate blank components. For this reason, a considerable amount of labor, besides auxiliary equipment, is required for assembly. Furthermore, a large number of staples is needed for joining the various components together which may result in injury to the upholstery and to unskilled personnel during the packaging or unpacking operation. Moreover, as the various container-forming components are frequently of irregular shape, considerable waste of material is experienced in the preparation of the blanks. In addition, since the components are of different sizes and shapes, keeping an inventory is unduly complicated.

Another example of shipping containers in the prior art is U.S. Pat. No. 3,978,982 to Richard K. Duncan. While the container of the Duncan patent is formed from a one-piece blank, it does not provide multiple layers of reinforcement behind the upper front wall.

SUMMARY OF THE INVENTION

It is, therefore, an object of the invention to provide a one-piece, form-fitting shipping container which overcomes the disadvantages associated with the previously described prior art shipping containers for furniture and the like.

This invention provides a reinforced, form-fitting shipping container formed from a single blank of generally rectangular outline and particularly suited for the shipping and storing of upholstered furniture. As used for upholstered chairs of the type having a relatively low seat and a backrest, the container comprises an intermediate horizontal wall overlying a front portion of the chair, a horizontal top wall extending over the top of the backrest, and an inclined upper front wall extending between the intermediate horizontal wall and top wall. The container is reinforced at areas of increased stress by integral reinforcing elements providing a multi-ply construction of the inclined upper front wall and preferably also of the intermediate horizontal wall and top wall. In the preferred embodiments, the inclined upper front wall is reinforced and stabilized by overlapping scored portions formed thereunder and extending from a pair of sidewalls.

Other objects, features, and advantages of this invention will become obvious to one skilled in the art to which it pertains upon reference to following detailed description and the drawings illustrating preferred embodiments of the invention.

IN THE DRAWINGS

FIG. **1** is a plan view of a blank from which one embodiment of the container of this invention is formed.

FIG. **2** is a perspective view of a partially assembled container formed from the blank of FIG. **1**.

FIG. **3** is a perspective view showing the completed and closed container.

FIG. **4** is a plan view of a blank from which an alternate embodiment of the container of this invention is formed.

FIG. **5** is a perspective view of a partially assembled container formed from the blank of FIG. **4**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

In the drawings, a blank of corrugated paperboard material, which is adapted to be folded into the reinforced form-fitting shipping container of this invention, is indicated generally by the numeral **10**. The blank **10** includes four adjacent wall panels, which are identified as front wall panel **12**, side wall panels **14** and **16**, and rear wall panel **18**. The wall panels **12**, **14**, **16**, and **18** are foldably connected to each other along score lines **13**, **15**, and **17** and may be folded into a perpendicular, rectangular configuration. Side wall **16** may be joined with the front wall panel **12** by means of a manufacturer's joint flap **20** which is hingedly connected to the free end of side wall **16** by means of a score line **21**. Each of the wall panels **12**, **14**, **16**, and **18** has a bottom closing flap **22** hingedly attached to its lower edge by means of a suitable score line **23**. The bottom closing flaps **22** are thereby adapted to be folded into overlapping and interlocking relationship to form a bottom for the container of this invention. An intermediate horizontal wall panel **24** is hingedly connected to the upper edge of front wall panel **12** by means of a score line **25**. An inclined upper front wall **26** is similarly foldably attached to the upper edge of intermediate horizontal wall panel **24** along a score line **27**.

A relatively narrow top wall panel **28** is foldably attached to the upper edge of the rear wall panel **18** along a score line **29**. A front flap **30** is similarly attached to the upper free edge of top wall panel **28** by means of a score line **31**, and, as will be understood in connection with FIG. **2**, is adapted to be folded into overlapping or abutting relationship with the inclined upper front wall **26**. Side walls **14** and **16** each have a first reinforcing flap **32** and **34**, attached thereto along score lines **33** and **35**, respectively, which are adapted to be folded into overlapping relationship with each other so as to be positioned under the intermediate horizontal wall panel **24**, which is attached to the front wall panel **12**. Each of the side wall panels **14** and **16** also include a second reinforcing flap **36** and **38**, which are hingedly attached to the upper edges of the side walls along score lines **37** and **39**, respectively. A pair of stabilizing flaps **40** and **42** are hingedly attached to the reinforcing flaps **36** and **38**, respectively. The remaining portions of side walls **14** and **16** are each formed into a pair of triangular-shaped reinforcing panels **44** and **46**, and **48** and **50**, respectively, which are connected to each other along fold or score lines **41** and **43**. The reinforcing panels **46** and **50** are connected to the stabilizing flaps **40** and **42**, respectively, along fold or score lines **45** and **47**. The reinforcing panels **44** and **48** are connected to the main

portion of side walls **14** and **16** along diagonal score lines **49** and **51**.

It will be noted that lower horizontal score lines **33** and **35**, associated with first reinforcing flaps **32** and **34**, are aligned with fold line **25** which defines the forward edge of intermediate horizontal wall **24** in the assembled container. Likewise, upper horizontal score lines **37** and **39**, associated with second reinforcing flaps **36** and **38**, are aligned with fold line **29**, the latter forming the upper edge of rear wall **18** when the container is completed. As previously indicated, these reinforcing flaps have substantially the same width as the respective associated walls; accordingly, the length of the horizontal score lines **33** and **35**, identified by the letter *w*, is substantially the same as dimension *x*, designating the distance between fold lines **25** and **27**, whereas dimension *y*, defining the length of upper horizontal score lines **37** and **39**, corresponds to the distance *z* between fold lines **29** and **31**. Furthermore, in the preferred embodiment shown, dimensions *x* and *z* are substantially the same with the result that intermediate horizontal wall **24** and top wall **28** have substantially the same size. This feature will aid in facilitating stabilized resting of the containers during shipping.

As can be seen in FIG. **2**, the blank **10** may be folded to a rectangular configuration wherein the four wall panels **12**, **14**, **16**, and **18** are positioned perpendicular to each other, and the manufacturer's joint flap **20** is placed into overlapping engagement with the front wall **12**. The bottom closing flaps **22** may then be folded into overlapping relationship to close the bottom of the container. The first reinforcing flaps **32** and **34** may then be folded so that they are perpendicular to the respective side wall panels, **14** and **16**, to which they are attached. The second reinforcing flaps **36** and **38** may then be folded so that they are perpendicular to their respective side wall panels **14** and **16**. Simultaneously, the stabilizing flaps **40** and **42** are folded downwardly from the reinforcing flaps **36** and **38** to an angle approximating that of the diagonal score lines **49** and **51** which connect reinforcing panels **44** and **48** to the side wall panels **14** and **16**. Simultaneously with the folding of stabilizing flaps **40** and **42**, reinforcing panels **44** and **46**, and **48** and **50** are folded into overlapping relationship beneath (or on top of) the stabilizing flaps **40** and **42**. Thus, it can be seen in FIG. **2** that the critical areas overlying the upholstered area of a chair to be positioned within the container of this invention are provided with multiple layers of corrugated paperboard to provide maximum reinforcement and protection for this area of the chair.

To close the container, the intermediate horizontal wall panel **24** is folded so as to be perpendicular to the front wall panel **12** into overlying contact with overlapping first reinforcing flaps **32** and **34**. The upper front wall panel **26** is then folded to an appropriate angle relative to the intermediate horizontal wall panel **24** to contact and overlie the stabilizing flaps **40** and **42**. As can be seen in FIG. **3**, the top wall panel **28** may then be folded to a position perpendicular to the rear wall **18** so as to overlie and contact the second reinforcing flaps **36** and **38** and the front flap **30** is folded into abutting or overlying relationship with respect to the upper front wall panel **26**. The front closing flap **30** may then be attached to the upper front wall **26** by means of staples or tape. Similarly, tape may be utilized to overlie the seam formed between the upper front wall panel **26** and the adjacent side wall panels **14** and **16**. It should be noted that stitching may be utilized in lieu of taping or stapling.

Thus, a unique reinforced shipping container has been formed from a single blank of corrugated paperboard and is particularly suited for shipping and storing upholstered furniture. This shipping container provides reinforced multiple-layer portions which overlie the front and top portions of the upholstered chair when it is positioned within the shipping container. These reinforced front and top portions are important in protecting the upholstered chair against damage during shipping and storage. They also are important for maintaining the structural stability of the container when such containers are stacked upon one another during shipping and storage.

FIGS. **4** and **5** depict an alternative embodiment to that shown in FIGS. **1** and **2**, in that the stabilizing flaps **40** and **42** of the FIGS. **1**-and **2** embodiment have been bisected by fold or score lines **53** and **55**, and **57** and **59**, respectively, to form two pairs of stabilizing flaps **52** and **54**, and **56** and **58**. Score lines **53** and **57** are formed approximately perpendicular to the diagonal score lines **49** and **51** to thereby form a pair of large triangular reinforcing panels **60** and **62**. In the embodiment of FIGS. **4** and **5**, the pair of reinforcing panels **60** and **62** are considerably larger than the corresponding reinforcing panels **44** and **46**, and **48** and **50** in the FIGS. **1** and **2** embodiment. As can be seen in FIG. **5**, when the enlarged triangular reinforcing panels **60** and **62** are folded into a position perpendicular to the corresponding side wall panels **14** and **16**, they overlap and contact each other at their upper corner portions. The triangular-shaped stabilizing flaps **52**, **54**, **56**, and **58** are folded downwardly beneath the reinforcing front panels **60** and **62**, to provide additional reinforcing and stabilizing support for the upper front wall panel **26**. It should be noted that the embodiment of FIGS. **4** and **5** provides additional reinforcing action adjacent the upper edge of the upper front wall panel **26**, which may be important when the container is used for a particular type of upholstered chair. Similarly, the embodiment of FIGS. **1** and **2** provides greater reinforcement of the middle and lower portions of the upper front wall panel **26**, which, likewise, may be important for protecting a different type of upholstered chair.

Therefore, the shipping containers as provided by this invention may be formed from a single blank of corrugated paperboard having a generally rectangular outline and are well-suited for shipping and storing upholstered furniture. The shipping containers provided by this invention provide unique reinforcing and stabilizing structural details which have been absent from the prior art to date.

What I claim is:

1. A blank of substantially rectangular outline defined by spaced upper and lower longitudinal edges and spaced transverse side edges, adapted to be formed into a stepped container having a reinforced inclined upper front wall, comprising

a series of rectangular blank sections including a front wall section, two side wall sections, and a rear wall section, arranged in side-by-side relation;

said front wall section comprising, in the order named, a lower front wall panel extending upwardly from said lower edge of said blank, an intermediate horizontal wall panel and an upper front wall panel, foldably joined to each other along

spaced first and second longitudinal fold lines, respectively;

said rear wall section comprising a rear wall panel extending upwardly from said lower edge of said blank and having a transverse dimension substantially greater than that of said lower front wall panel, and a top wall panel joined to said rear wall panel along an upper longitudinal fold line;

each of said side wall sections comprising a side wall panel having a stepped upper edge defined by

a short lower score line aligned with said upper fold line and having a length corresponding to the spacing of said first and second fold lines;

a short upper score line aligned with said upper fold line and having a length corresponding to the transverse dimension of said top wall panel;

a diagonal score line interconnecting said lower and upper score lines;

said side wall sections each including:

a first reinforcing flap foldably joined to said lower score line and defined by slots extending from the ends of said lower score line to the upper edge of said blank,

a second reinforcing flap foldably joined to said upper score line and defined by a slot extending from one end of said upper score line to the upper edge of the blank and by a perpendicular score line extending from the other end of the upper score line to the free edge of the blank,

at least one stabilizing flap hingedly attached to said second reinforcing flap, and

at least one reinforcing panel foldably joined to said side wall panels along said diagonal score line and being foldably attached to said stabilizing flap along a fold line extending from said perpendicular score line to a free edge of said stabilizing flap.

2. The blank of claim **1** wherein said fold line is generally parallel to said upper and lower score lines and aligned with said upper score line so that said stabilizing flaps are generally rectangular in shape and each of said side wall sections include a pair of reinforcing panels foldably connected along a bisecting score line which extends from said perpendicular score line to one of said slots defining said first reinforcing flap.

3. The blank of claim **1** wherein said fold line is generally perpendicular to said diagonal score line and said stabilizing flaps each including a pair of foldably connected sections connected along a bisecting score line which extends from said perpendicular score line to the outer edge of the blank.

4. The blank of claim **1** wherein said rear wall section includes a front flap foldably joined to said top wall panel along a fold line spaced upwardly from said upper fold line.

5. The blank of claim **1**, further comprising bottom closure flaps foldably joined to said blank sections along said lower edge of said blank.

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